

L8 ANSWER 100 OF 101 CAPLUS COPYRIGHT 2003 ACS on STN
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 TITLE: Stabilized **sulfamic** acid products
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AB A method is described for stabilizing the reaction products obtained by sulfating with H₂NSO₃H (I) mono- or polyhydric alcs., partial esters, ethers, or other derivs. having at least 1 OH group. To water or water-alc. solns. of the sulfation reaction products are added **buffer** materials to adjust the pH to about 6. Thus, to H₂NSO₃H 105 suspended in a propylene glycol monoester 267 of coconut fatty acids is added dicyanodiamide 10 parts, and the mixt. heated in a CO₂ atm. to 115-25.degree. with stirring. After 80 min., the product is a pasty mass; neutralizing the excess I by passing in NH₃ yields a cream-colored paste (II) with a pH of 5.7. I 100 is agitated with coconut acid monoester of propylene glycol 250, and AcNH₂ 8 parts at 120.degree., and NH₃ passed in after 30 min., yielding a water-sol. product (III). Methylhendecylearbinol 200, I 110, and urea 25 parts are stirred 30 min. at 110.degree., yielding a water-sol., light tan mass (IV) after neutralization of the NH₃. The stabilizing treatment is carried out in general by mixing the **buffer** agent (Na₂H₂P₂O₇, citric acid, (:CHCO₂Na)₂, NaH₂PO₄, K₂H₄C₄O₆, (CH₂CO₂H)₂, Na malonate, lactic acid, and AcONa) with an aq. soln. of the crude sulfation product (II, III, or IV) at room temp. These stabilized sulfation products possess useful surface-active properties and may be used as detergents, wetting agents, foaming agents, emulsifiers, demulsifiers, dispersants, as anti-splattering agents for cooking fats, and in lubricants. Cf. C.A. 38, 554.1; Brit. 382,942, C.A. 27, 4244.

L8 ANSWER 65 OF 101 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1968:70323 CAPLUS
DOCUMENT NUMBER: 68:70323
TITLE: Use of **sulfamic acid** in the bleaching of
paper pulp
AUTHOR(S): Luna, J.
SOURCE: Industrial Chemist (1967), 54(603), 365-72, (604),
421-6
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AB The effect of **sulfamic acid** (I) added to the hypochlorite phase during bleaching processes for kraft paper was examd. The CEH (chlorination, alk. extn., and hypochlorite treatment) process was used with industrial kraft pulp obtained from *Pinus sylvestris*. Thus, the alk. extd. pulp was treated 2 hrs. at 40.degree. and pH 9.7 (**buffered** medium) using 0-10% I. The Cl consumed, d.p., brightness, tensile strength, bursting strength, tear strength, and folding endurance of the treated pulps were detd. The results showed that the mech. properties of the pulp reach a max. at a concn. of 4 parts I/100 parts active Cl. The d.p. increased from 950 (in the case of hypochlorite soln. contg. no. I) to 1020, 1040, 1060, and 1080 in the case of 4, 5, 6, and 10 parts I. Bleaching was examd. under different treatment conditions: 2 and 6 hrs., 40.degree. and 58.degree., pH 7.4 and 9.7; and in the presence and absence of I. The results showed that in the presence of 4% I, an increase of brightness was observed upon prolonged treatment without affecting the mech. properties. The effect of metallic ions, such as Fe, Mn, or Cu, on bleaching with hypochlorite was examd. in the presence and absence of I. The results showed no change in brightness upon addn. of 4% I. However, the mech. properties were improved in the presence of 5 mg./l. Fe³⁺ and I. The use of CEHH (2 successive hypochlorite treatments) was examd. at 40.degree. and 50.degree. and in the presence of 0 and 4% I. The results showed that addn. of I improved brightness and mech. properties. I has no effect on the brightness stability of spruce bisulfite pulp treated by the CEHH process in the presence of 0 and 15% I. The reaction conditions and optimum I % are given. The results show that it is possible to obtain, in the presence of I, paper of a brightness equiv. to that obtained without I if the bleaching is carried out at 50.degree. instead of 40.degree.. An improvement in the phys. properties of pulp bleached at 40.degree. and 50.degree. was observed in the presence of 15% I. The effect of 0.25 mg./l. Cu or Fe on the CEHH bleaching was examd. in the presence of 15% I at pH 7.5 and 9.7. The results showed that in the absence of I, a 25% decrease in d.p. and a drop in the mech. properties were observed; when the pH was lowered from 9.7 to 7.5, however, in the presence of I and pH 7.5, paper with characteristics similar to those obtained at pH 9.7 was observed. Presence of Cu and Fe lowered brightness even in the presence of 15% I. Similarly, hornbeam pulp was treated using the CEH process in the presence of 15% I. The reaction conditions and optimum I concn. were discussed. A semi-industrial anal. for the effect of I on the CEHH treatment was presented. The potentiometric titrn. curves of I and NaOCl were shown. A mechanism for the action of I was shown as follows:
$$\text{H}_2\text{NSO}_3\text{Na} + \text{NaOCl} \rightarrow \text{ClNHSO}_3\text{Na} + \text{NaOH}; 2\text{ClNHSO}_3\text{Na} + \text{H}_2\text{O} \rightarrow \text{H}_2\text{NSO}_3\text{Na} + \text{Cl}_2\text{O}$$

The given mechanism does not explain the existence of an optimum concn. of I for each type of pulp, or set up a relation between the pulp quantity and hypochlorite concn. It was then concluded that I works as a transfer agent for Cl and is not affected by metallic ions present in bleaching media.